1   19.   The storage medium of claim 18, further comprising instructions for:

2   a)   selecting a communication parameter;

3   b)   setting a target value of said communication parameter; and

4   c)   arranging said modes in said lookup table based on said target value.

1   20. (currently amended)   The storage medium of claim 19, further comprising instructions

2   for:

3   a)   measuring a measured value of said communication parameter in said wireless

4   communication channel; and

5   b)   assigning an adjustment to at least one of said first-order statistical parameter and

6 said second-order statistical parameter based on a difference between said measured value and

7 said target value.

REMARKS

This response is provided to the Office Action of **June 18th, 2003**. In the Action, claims

1-20 were rejected under multiple sections of 35 USC, in addition to receiving a provisional,

non-statutory double patenting rejection in view of copending patent application 09/665,149,

commonly assigned to the Assignee of the above-referenced application.

Applicant thanks the Examiner for pointing out the inconsistent nature of claim 17 as

originally filed. In response, Applicant has cancelled claim 17, above, and has taken the

opportunity to amend claim 20 to remove lingering informalities identified therein. Applicant

respectfully traverses the other statutory rejection(s) of the now-pending claims 1-16 and 18-20,

as selectively amended. In addition, Applicant respectfully traverses the provisional, non-

statutory double patenting rejection, while reserving the right to present a terminal disclaimer

pursuant to 37 CFR 1.321(c).

Accordingly, in view of the foregoing amendments and the following remarks,

reconsideration of the above-captioned application is respectfully requested.

Rejection of Claim 17: 35 USC §112, second paragraph

In **paragraphs 2** and **3** of the Action, claim 17 was rejected under 35 USC §112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which Applicant regards as the invention. In particular, the Examiner correctly pointed

out an inconsistency within the claim stemming from an antecedent basis problem.

In response, Applicant has cancelled claim 17, as above, thereby removing the basis for

the §112, second paragraph, rejection thereof.

Double Patenting Rejection

In **paragraphs 4** and **5** of the Action claims 1-20 are provisionally rejected under the

judicially created doctrine of obviousness-type double patenting as being unpatentable over

claims 1-22 of copending Application No. 09/665,149. In response, Applicant offers the

following remarks respectfully traversing the basis of such rejection. Nonetheless, Applicant

respectfully reserves the right to follow this response with a terminal disclaimer thereby

rendering the rejection moot.

The Action acknowledges that the claims of the pending application (1-20) are not

identical to the claims (1-22) of the co-pending application, "they are not patentably distinct

from each other because they relate to communication systems/methods that support multiple

modulation and channel coding schemes. It would have been obvious to a person of ordinary skill in the art to implement the claimed invention based on the claims of the copending application because the claims of the copending application as well as the claims of the present application *teach to select a channel coding scheme based on channel characteristics which are estimated in terms of variance and mean values*". Applicant respectfully disagrees.

The claims of the pending application are generally directed to the generation, or construction of a table of several alternative channel modulation and coding modes (or options that the transmitter can select from during subsequent operation). This table is constructed based, at least in part, on performance characteristics obtained during empirical or simulated testing of a channel. In this regard, claims 1-16 and 18-20 of the pending application are not directed to the "selection of a channel coding scheme based on channel characteristics", as characterized in the Action.

More particularly, the claims of the pending application are directed to construction of a table of channel modulation and coding modes from an infinite possible combination of such modes. In contradistinction, the claims of the copending application are generally directed to the dynamically adaptive selection of a channel modulation and coding mode from a finite list of possibilities (i.e., the constructed mode table) based on the currently experienced channel conditions and desired channel quality and robustness.

It is further noted that the channel parameters used in the construction of the mode table need not be the same as the channel parameters used in the adaptive, dynamic selection of a channel mode during the normal operation of the transceiver.

Thus, Applicant respectfully submits that the claims of the pending application are directed to different patentable subject matter requiring different processes directed to produce

different results that may utilize different parametric input, and work in a separate range of potential solutions. That is, Applicant respectfully submits that the claims of the pending application are, indeed, patentably distinct from those of the copending application denoted above. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the provisional, non-statutory double-patenting rejection.

Rejection of Claims 1-20: 35 USC §102(e)

In **paragraphs 6** and **7** of the Action, claims 1-20 were rejected as being anticipated by a patent issued to Olofsson, et al. (USP 6,167,031) pursuant to 35 USC §102(e). In response, Applicant traverses the rejection of such claims.

The Olofsson Reference

The Olofsson reference is generally directed to a method for selecting a combination of modulation and channel coding schemes in a digital communication system. In this regard, Olofsson teaches a multi-step process including: measuring at least one link quality parameter; then calculating at least one channel characteristic measure from the at least one link quality parameter; estimating the type of channel conditions a transmission is susceptible to; estimating how a change of modulation and/or channel coding scheme would effect link quality; and finally, selecting a modulation and/or channel coding scheme (col. 4, lines 42-65; col. 6, lines 49-61; col. 7, lines 8-17). More particularly, Olofsson teaches that based "on measured link quality parameters over the predefined time period, the system 10 also determines the variances of one or more of the link quality parameters. Based ***on the variances***, the system estimates the data throughputs S for ***all*** combinations of modulation and channel coding schemes over one or more

RF links. The system then selects a new combination of modulation and channel coding schemes on a RF link, if switching to the new combination on that RF link provides a higher data throughput S than that provided by a current combination (col. 7, lines 8-17).

In this regard, Applicant respectfully submits that the Olofsson solution represents the computationally expensive, and, accordingly, relatively slow adaptive channel modulation and coding mechanisms typical of the prior art.

Claims 1 and 18

The claims of the pending application are generally directed to embodiments of a method for constructing mode lookup tables for subsequent use by a transceiver in support of timely transitions for adaptive modulation and channel coding. More particularly, with reference to, e.g., rejected claim 1, a method for constructing a mode lookup table is presented comprising:

> a) selecting at least one quality parameter of said data as received
> by said receive unit;
> b) determining a first-order statistical parameter of said at least one
> quality parameter;
> c) determining a second-order statistical parameter of said at least
> one quality parameter; and
> d) arranging said modes in said lookup table based on said first
> order statistical parameter and based on said second-order
> statistical parameter.

In support of the rejection that, e.g., claim 1 is anticipated by Olofsson, the Action references col. 6, lines 49-57. A reading of the citation, as well as the rest of the reference, makes clear that Olofsson fails to teach, disclose or suggest the construction or subsequent use of mode lookup tables. In particular, Applicant respectfully submits that the Olofsson reference fails to teach at least the element (d) of arranging said modes in said lookup table based on said first order statistical parameter and based on said second-order statistical parameter.

Despite the characterization in the Action, Olofsson fails to construct or utilize a mode lookup table for the determination or selection of modulation and/or channel coding scheme. Rather, Olofsson states that based "on the variances, the system 10 estimates the data throughputs S for *all combinations of modulation and channel coding schemes on a RF link,* [and] *switching to a new combination on that RF link provides a higher data throughput S than that provided by the current combination*" (col. 7, lines 8 through 17). That is, Olofsson teaches that dynamically calculates potential performance improvements based on all combinations of modulation and channel coding schemes, rather than the construction of, or subsequent reliance on a mode lookup table.

In addition to the foregoing, it is clear that Olofsson makes the determination of whether to change to a new modulation and channel coding scheme *"Based on the variances, the system..."* (col. 7, lines 11-17). That is, Olofsson makes the determination based only on an example of a second-order statistical parameter (in the parlance of, e.g., rejected claim 1). Thus, Applicant respectfully submits that the Olofsson reference fails to teach, disclose or suggest the element (d) of arranging said modes in said lookup table based on said first-order statistical parameter _**and**_ said second-order statistical parameter.

In order to support a §102 rejection, it is well settled that a single reference must teach each and every element of a rejected claim as presented in the claim. In this case, Applicant respectfully submits that the Olofsson reference fails to meet this burden. In particular, Applicant respectfully submits that Olofsson fails to teach, disclose or suggest the construction or use of mode lookup tables, much less at least element (d), e.g., of rejected claim 1 for at least the arguments presented above.

Insofar as the Olofsson reference fails to teach each and every element of claim 1, Applicant respectfully requests that the §102(e) rejection thereof be withdrawn.

Applicant notes that claim 18 enjoys features (e.g., element d) similar to those denoted above in claim 1, albeit in accordance with its respective embodiment. In this regard, Applicant respectfully submits that claim 18 is likewise patentable over the Olofsson reference by virtue of at least the arguments presented above with regard to claim 1. Accordingly, Applicant respectfully requests that the §102(e) rejection thereof be withdrawn.

Claims 2-16, 19 and 20

Applicant notes that claims 2-16, 19 and 20 depend from patentable independent claims 1 or 18, respectively. Thus, in addition to any other independent bases for patentability, Applicant respectfully submits that claims 2-16, 19 and 20 are likewise patentable over the Olofsson reference by virtue of at least such dependence on patentable base claims. Accordingly, Applicant respectfully requests that the §102(e) rejection of such claims be withdrawn.

CONCLUSION

In light of at least the foregoing remarks, Applicant respectfully submits that claims 1-16 and 18-20 are in condition for allowance and earnestly requests prompt notice thereof. *Applicant respectfully invites the Examiner to contact the undersigned representative for a telephone conference if it determined that such a conference could lead to allowance of one or more of the pending claims.*

Should it be determined that any additional fee is required, or overage returned, in association with this response, please debit or credit my deposit account number 50-0221 as appropriate.

Respectfully submitted,
David J. Gesbert, et al.

Dated: September 18, 2003   by: _Michael Proksch_

Michael A. Proksch
Reg. No. 43,021
Attorney for Assignee

c/o Blakely, Sokoloff, Taylor & Zafman, LLP
12400 Wilshire Blvd., 7th Floor
Los Angeles, CA 90025
Telephone: (503) 264-3059